Epitomes

Important Advances in Clinical Medicine

Preventive Medicine and Public Health

The Scientific Board of the California Medical Association presents the following inventory of items of progress in preventive medicine and public health. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers or scholars to stay abreast of these items of progress in preventive medicine and public health that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Preventive Medicine and Public Health of the California Medical Association and the summaries were prepared under its direction.

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Cholesterol Reduction—Pros and Cons

MORE THAN 5 MILLION AMERICANS have symptomatic coronary artery disease, and, though age-adjusted mortality due to this condition has declined steadily since the 1960s, it remains the leading cause of death in the United States. Thus, clinicians' efforts to prevent the onset or progression of coronary disease can provide major benefits.

Controversy has existed regarding the importance of elevated cholesterol as a risk factor and the impact of reduction efforts. Recent studies, however, have confirmed the significance of the risk and shown the benefits produced by reducing elevated levels.

In October 1987, the National Heart, Lung, and Blood Institute recommended that baseline cholesterol levels be determined for all persons aged 20 years or older. Persons with values below 200 mg per dl should be retested every five years. Those with confirmed values of 200 to 239 mg per dl who do not have other risk factors or evidence of coronary artery disease should be placed on a low-fat diet and retested annually. Risk factors to be considered, in addition to the major ones of smoking and hypertension, are male sex, diabetes mellitus, cerebrovascular or peripheral vascular disease, weight greater than 30% above standard, high-density-lipoprotein cholesterol (HDL-C) levels of less than 35 mg per dl, and a family history of premature coronary artery disease. Those in the 200 to 239 mg per dl range with evidence of heart disease or two or more risk factors and those with confirmed values above 239 mg per dl should have a lipoprotein analysis. If analysis reveals low-density-lipoprotein cholesterol levels of 130 mg per dl or greater, specific diet therapy and follow-up are recommended. Details of this program have recently been published in the *Archives of Internal Medicine.*

Given the most recent information available, it appears that all major modifiable risk factors, including elevated cholesterol levels, should be addressed. Patients with confirmed total cholesterol levels above the 200 to 220 mg per dl level or low HDL-C levels (less than 35 to 40 mg per dl) are candidates for therapy to prevent premature coronary artery disease. Higher cholesterol levels, or the presence of multiple risk factors, increase the urgency for intervention. Diet, weight control, and exercise may be sufficient to lower cholesterol levels while simultaneously increasing HDL-C levels. If these efforts fail, however, drug therapy should be considered.

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Penicillinase-Producing *Neisseria gonorrhoeae*

PENICILLINASE-PRODUCING *Neisseria gonorrhoeae* (PPNG) organisms were first isolated in 1976, although gradually increasing resistance on a chromosomal basis was noted 30 years before, shortly after the introduction of penicillin treatment for gonorrhea. For the past ten years, worldwide surveillance of resistance patterns has caused alarm, as both plasmid-induced (PPNG) and chromosomally mediated resistance in *N gonorrhoeae* have appeared and crossed borders from one country to another.

In 1986, PPNG was reported to infect 16,600 patients in the United States, representing only 1.8% of all *N gonorrhoeae* infections. Chromosomally mediated resistance to antibiotics other than penicillin remains a smaller proportion still. Although these numbers are small, there is concern that outbreaks would be difficult to control, and worldwide experience lends credence to that fear. In the Far East, PPNG accounts for as much as 50% of all organisms isolated and, as a consequence, spectinomycin was adopted by the US military as the drug of choice for treating gonorrhea.

Susceptibility testing by the Centers for Disease Control of *N gonorrhoeae* organisms from around the US has shown resistance to spectinomycin, tetracycline, trimethoprim-sulfamethoxazole, cefoxitin, and erythromycin.

Epidemics of PPNG or other antibiotic-resistant organisms tend to appear in hyperendemic areas, such as New York City and Los Angeles. Outbreaks have occurred elsewhere, however, in both homosexual and heterosexual groups.

There is evidence that some antibiotic resistance patterns develop because of antibiotic use, but they may also be plasmid related. Several laboratories are doing susceptibility testing of *N gonorrhoeae* routinely. Physicians treating gonorrhea must maintain a high level of suspicion and concern about treatment failures and think of resistance of the gonococcus rather than poor compliance as a cause.

Physicians should maintain an awareness of local resistance patterns and question their patients about both domestic and international travel. The days of a shot of penicillin and a pat on the back to treat gonorrhea are clearly over, and vigilance on the part of physicians may help prevent epidemics of resistant organisms in the United States.

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Preventing Transmission of Human Immunodeficiency Virus Infection

IN JUNE 1986, the US Public Health Service held a workshop on the acquired immunodeficiency syndrome (AIDS) at Coolfont, Berkeley Springs, West Virginia, in which the course of the AIDS epidemic was projected through 1991. Some of the most important estimates were as follows:

- By the end of 1991, there will have been a cumulative total of more than 270,000 cases of AIDS in the United States (up from more than 38,000 as of July 1986), with more than 74,000 cases occurring in 1991 alone.
- By the end of 1991, there will have been a cumulative total of more than 179,000 deaths from AIDS in the US, with 54,000 of these occurring in 1991 alone.
- The vast majority of AIDS cases will continue to come from the currently recognized high-risk groups, including homosexual men and intravenous-drug users.
- New AIDS cases in men and women acquired through heterosexual intercourse will increase from 1,100 in 1986 to almost 7,000 in 1991.

Although one drug, zidovudine, has resulted in several months' prolongation of life and fewer opportunistic infections in AIDS patients, there is no satisfactory treatment for the causative agent of AIDS, the human immunodeficiency virus (HIV). Prospects for an effective vaccine against HIV are not promising for at least five years and possibly until the turn of the century. Therefore, for the foreseeable future, the most effective way of reducing the spread of HIV infection is through educating the public about the transmission of HIV, especially those persons at a higher risk for AIDS. Physicians have an important role and responsibility to play in this educational campaign in their daily interactions with patients.

The educational message must be direct rather than vague. "Always use a condom with a spermicidal lubricant from the start of sexual intercourse until the finish" is preferable to "Avoid bodily secretions." Educators, including physicians, must be prepared to use the vernacular and to take into account cultural traditions and practices of diverse groups, including ethnic minorities and homosexual men. Preventing AIDS among intravenous-drug users may be challenging because of the distrust of authority in this population, and their sexual partners may be difficult to reach because the partners do not necessarily have contact with drug treatment centers. Nevertheless, drug users should be encouraged to use methadone and other treatment programs.

The voluntary, confidential use of the HIV antibody test should be encouraged for those who may be at risk for infection, both to identify persons in low-risk groups for education in preventing further transmission, and to serve as a starting point in identifying persons who may benefit from treatment as effective antiviral and immunomodulating agents become available. Patients should be counseled adequately about the implications of a confirmed positive HIV antibody test both before and after the test and should be assured of strict confidentiality. The final decision about whether to take the HIV antibody test should be made by the patient.

As HIV infection becomes more prevalent, the risk that health care workers will be exposed to blood from infected patients also increases, especially when blood precautions are not followed. The Centers for Disease Control have issued guidelines for preventing HIV transmission in health care settings. These guidelines emphasize the need for health care workers to treat blood and body fluids from *all* patients as potentially infected with HIV and to adhere rigorously to infection control precautions for minimizing the risk of exposure to blood and body fluids of all patients.

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Preventing Influenza in Older Adults

THE US PUBLIC HEALTH Service's Advisory Committee on Immunization Practices recommends annual influenza immunization for persons aged 65 years and older and for other high-risk groups. Until recently, the recommendation was based primarily on extrapolated efficacy data from younger populations, rather than on direct studies in older age groups. Recent research not only confirms the efficacy of flu shots in older age groups, but suggests that the benefits of immunization may be greater than generally appreciated.

From data from the National Hospital Discharge Survey, it has been calculated that persons age 65+ have 370 per 100,000 excess hospital admissions during an influenza epidemic. This rate is more than ten times that of younger adults. The national cost of these excess hospitalizations was estimated at $185 million. Yet, in a study of noninstitutionalized older adults in a large health maintenance organization, flu shots prevented 72% of influenza- and pneumonia-related hospital admissions during epidemic years.

In older adults in long-term-care facilities, vaccine efficacy is less (about 30%) due to age- and disease-related im-